U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

APPLICATION OF:	)	
	)	
EnCana Oil & Gas (USA) Inc.	)	
formerly AEC Oil & Gas (USA) Inc.	)	No. OCS 2002-01, Revision 1
950 17th Street, Suite 2600	)	APPROVAL OF APPLICATION
Denver, Colorado 80202	)	TO CONSTRUCT

EnCana Corporation was created on April 5, 2002, by the merger of Alberta Energy Corporation Ltd. (AEC) and PanCanadian Energy Corporation. The applicant is now EnCana Oil & Gas (USA) Inc. (hereafter referred to as "EnCana").

This revised permit effective upon issuance and rescinds the Outer Continental Shelf (OCS) permit, No. OCS 2002-01, previously issued to EnCana on May 29, 2002.

Pursuant to the Agency regulations for the OCS set forth at Title 40, Code of the Federal Regulations, Part 55 and based upon complete information submitted by EnCana on January 30, 2002, February 21, 2002, March 8, 2002, and November 14, 2002, the Regional Administrator now finds as follows:

FINDINGS

1. EnCana proposes to conduct exploratory oil and gas drilling in the OCS near-shore waters of the Beaufort Sea at the McCovey Prospect exploration site (the site hereafter referred to as "McCovey"), north-northeast of the Midway Islands, in the vicinity of Prudhoe Bay, Alaska. Exploratory drilling will be conducted from November 2002 through March 2003, and / or, from November 2003 through March 2004.
2. EnCana proposes to utilize the Steel Drilling Caisson/Mat drilling facility (the facility hereafter referred to as "SDC") to conduct the exploration activities at the McCovey site.
3. The SDC is classified as an ambient air quality facility under 18 AAC 50.300(b) because each of its two flares has a rated capacity of greater than 100 MMBtu per hour.

4. Due to the SDC's classification as a facility having the potential to violate one or more of the ambient air quality standards (AAQS), EnCana is required to obtain a construction permit pursuant to 18 AAC 50.300(b).
5. EnCana has requested operating restrictions for SDC so as to limit its potential to emit air pollution and thus avoid interfering with the attainment or maintenance of the AAQS in the area of impact. To accommodate EnCana's request, EPA is restricting the following operations of the SDC through this permitting action: (a) annual quantity of diesel fuel combusted by all emissions units, (b) sulfur content of the diesel fuel being combusted, (c) annual hours of operation for the test flares, two of the garbage incinerators, and tugs while physically attached to the SDC, and (d) annual hours of diesel fuel combustion for one of the garbage incinerators.
6. In order to further limit SDC's potential to emit air pollution and thus avoid interfering with the attainment or maintenance of the AAQS in the area of impact, EPA is restricting the following operations of marine vessels physically attached to the SDC through this permitting action: (a) sulfur content of the diesel fuel being combusted and (b) annual hours of operation.
7. EnCana conducted an analysis to determine the SDC and its related activity's potential emissions utilizing fuel use limits and limits on hours of operation. EnCana assumed that all emissions units were operated at their respective maximum rated hourly capacities over a projected operating period specific to each unit. EnCana also assumed that all diesel fuel fired had a maximum allowable sulfur content. The projected maximum allowable emissions as calculated by EnCana are presented here: nitrogen oxides (NO_x) – 153.65 tons per year (TPY), carbon monoxide (CO) – 23.49 TPY, respirable particulate matter (PM_{10}) – 9.13 TPY, sulfur dioxide (SO_2) – 10.04 TPY, volatile organic compound (VOC) – 23.63 TPY, and lead (Pb) – 0.3 pounds per year (0.00015 TPY).
8. Projected allowable emissions of NO_x from the SDC and related activities exceed 40 TPY given the terms of the proposed construction approval. Pursuant to 18 AAC 50.310(n), EnCana is required to demonstrate that allowable NO_x emissions from the facility will not interfere with attainment or maintenance of the AAQS for NO_2.

9. Pursuant to 18 AAC 50.310(n), EnCana is not required to make such an air quality demonstration for PM_{10}, SO_2, and Pb as allowable emissions from the facility, including emissions from the SDC and its related activity, do not exceed, respectively 15 TPY, 40 TPY or 0.6 TPY. The above provision does not provide for any ambient air quality demonstration due to CO or VOC emissions.
10. EnCana conducted an ambient air impact analysis of the original emissions inventory included in the May 29, 2002, permit to demonstrate that allowable emissions from the facility will not interfere with attainment or maintenance of the AAQS for NO_2.
11. This revised permit will expire on July 4, 2004. Therefore, the SDC is a "temporary construction activity" as defined in 18 AAC 50.990(92) and exempt from the requirement to demonstrate that allowable emissions from the facility will not interfere with maximum allowable ambient concentrations.
12. EnCana did not conduct an ambient air impact analysis to demonstrate that allowable emissions from the facility will not interfere with maximum allowable ambient concentrations.
13. Air pollution emissions from EnCana are regulated by the state of Alaska requirements applicable to OCS sources, July 2, 2000, (40 CFR Part 55, Appendix A) and the Alaska Implementation Plan (40 CFR Part 52, Subpart C). Conditions within this permit are consistent with the above regulations.
14. No proposed emissions unit at the SDC is subject to either the New Source Performance Standards (40 CFR Part 60) or the National Emissions Standards for Hazardous Air Pollutants (40 CFR Part 61 and 63).
15. EPA is permitting SDC to operate with maximum projected allowable emissions of: NO_x – 123.36 TPY, CO – 16.55 TPY, PM_{10} – 8.25 TPY, SO_2 – 4.93 TPY, VOC – 22.74 TPY, and Pb – 0.3 pounds per year (0.00015 TPY).
16. On August 7, 2002, EnCana notified EPA of commencement of construction and startup of the facility as required under Condition 5 of the original permit.

Accordingly, it is hereby determined that, subject to the conditions set forth below, EnCana is permitted to conduct exploratory oil and gas drilling using the SDC/Mat drilling

facility at the McCovey Prospect exploratory site, as described in the permit applications submitted on January 30, 2002, February 21, 2002, March 8, 2002, and November 14, 2002.

APPROVAL CONDITIONS

1. The following restrictions on the type and quantity of fuel, hours of operation, and emission limitations apply to the SDC's air pollution emission units (EU). These limits shall not be exceeded:

EU ID	EU	EU Description	Fuel Type	Annual Operating Limit	Emission Limitations
1	Caterpillar D-399 Engine	Drilling Main Engine #1	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
2	Caterpillar D-399 Engine	Drilling Main Engine #2	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
3	Caterpillar D-399 Engine	Drilling Main Engine #3	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
4	Caterpillar D-399 Engine	Drilling Main Engine #4	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
5	Caterpillar D-399 Engine	Drilling Main Engine #5	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
6	Caterpillar D-399 Engine	Drilling Main Engine #6	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
7	Caterpillar D-399 Engine	Drilling Main Engine #7	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
8	Flare - P	Flare on the Port Side	Well gas	See limit at end of table	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]

EU ID	EU	EU Description	Fuel Type	Annual Operating Limit	Emission Limitations
9	Flare - S	Flare on the Starboard Side	Well gas	See limit at end of table	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
10	GM 12V71 Engine	Port Crane Engine	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
11	GM 12V71 Engine	Starboard Crane Engine	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
12	GM 6V71 Engine	Aft Crane Engine	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
13	Lister Boiler	Hot water boiler	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
14	Lister Boiler w/Saacke Burner	Hot water boiler	Used oils from SDC equipment and diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
15	Atlas MAX50S	Garbage incinerator	Trash, domestic waste, and diesel	500 hours combusting diesel fuel[1]	•20% Opacity[3,4]
16	Cuttings Cleaning System	Volcano burner fitted to a rotary dryer	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
17	DST	Drilling supply tug physically attached to SDC	Diesel	264 hours[1]	•20% Opacity[7] •Diesel Fuel Sulfur Content $\leq$ 0.5 % by weight[2]
18	FST	Fuel supply tug physically attached to SDC	Diesel	100 hours[1]	•20% Opacity[7] •Diesel Fuel Sulfur Content $\leq$ 0.5 % by weight[2]
19	Lister Air Heater	Indirect fired hot-air heater	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]

EU ID	EU	EU Description	Fuel Type	Annual Operating Limit	Emission Limitations
20	MAC Chinook 800	Indirect fired hot-air heater	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
21	Kubota D905	Diesel engine to power MAC Chinook 800	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
22	MAC Chinook 800	Indirect fired hot-air heater	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
23	Kubota D905	Diesel engine to power MAC Chinook 800	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
24	Halliburton Line Heater	Heats the piping during well testing	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
25	Herman Nelson	Hot-air heater	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
26	Herman Nelson	Hot-air heater	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
27	Herman Nelson	Hot-air heater	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
28	Smart Ash II	Garbage incinerator	Trash, domestic waste, and diesel	See limit at end of table	•20% Opacity[3,4]
29	Smart Ash II	Garbage incinerator	Trash, domestic waste, and diesel	See limit at end of table	•20% Opacity[3,4]
30	Twin Detroit 8V71's	Halliburton cement pump	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]

EU ID	EU	EU Description	Fuel Type	Annual Operating Limit	Emission Limitations
31	Detroit 4-71	Schlumberger logging unit	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
32	Hatz A239	Schlumberger GPS unit	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
33	Onan 12ODJC	Schlumberger logging unit	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
34	Lister ST3	Schlumberger vertical seismic profiler	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
35	Lister ST3	Schlumberger vertical seismic profiler	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
36	Onan 7.5DKDEJ	Halliburton Slickline generator	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
37	Perkins 6.354	Halliburton Slickline hydraulic power	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
38	Delmag D46-32	Drive hammer	Diesel	-	•20% Opacity[3,4] •0.05 grains PM/SCF[5] •500 ppm SO_2[6]
1-7, 10-16, and 19-38	SDC	All diesel fueled emissions units	Diesel	1,263,909 total gallons of diesel fuel combusted[1]	•Diesel Fuel Sulfur Content ≤ 0.05% by weight[2]
8 and 9	Flare – P and Flare – S	Both flares	Well gas	96 total combined hours of operation[1]	-

EU ID	EU	EU Description	Fuel Type	Annual Operating Limit	Emission Limitations
28 and 29	Smart Ash II units	Garbage incinerators	Trash, domestic waste, and diesel	7200 hours combined hours of operation[1]	-

Note of explanation regarding operating limits and emission limits.

1. The restriction on annual hours of operation and annual fuel use is an owner-requested limit. Compliance is determined on a 12-month rolling average basis.

2. The diesel fuel sulfur content limit is an owner-requested limit.

3. Visibility through the exhaust effluent of the incinerator may not be reduced by visible emissions, excluding water vapor, by more than 20 percent (20% opacity) for a total of more than three minutes in any one hour per 18 AAC 50.050(a)(2).

4. Visible emissions, excluding condensed water vapor, from each stationary IC engine, each flare, each boiler, and the cuttings cleaning system may not reduce visibility through the exhaust effluent by greater than 20 percent (20% opacity) for a total of more than three minutes in any one hour, per 18 AAC 50.055(a)(1).

5. The particulate matter (PM) limit of 0.05 grains per standard cubic foot (SCF) is located at 18 AAC 50.055(b)(1).

6. The sulfur-compound limit (expressed as SO_2) of 500 ppm averaged over a period of three-hours is located at 18 AAC 50.055(c).

7. Visible emissions, excluding condensed water vapor, from each marine vessel fixed to the SDC may not reduce visibility through the marine vessel's exhaust effluent by greater than 20 percent (20% opacity), per 18 AAC 50.070. See 18 AAC 50.070 as many exceptions may apply.

2. EnCana shall notify the Environmental Protection Agency (EPA) in writing of any occurrence of an exceedance of an operational limitation or applicable requirement as specified in Condition 1 above; such notification shall be forwarded to EPA in writing in a timely fashion and in each instance no later than ten (10) calendar days from the date of such occurrence. The notification shall include an estimate of the resultant emissions and narrative report of the cause, date, time, duration and steps taken to correct the problem and avoid a recurrence. The notification should be sent to the EPA at the following address: EPA Region 10, Office of Air Quality, 1200 Sixth Avenue,

Seattle, WA 98101. EnCana shall contemporaneously send a copy of all such reports to the Alaska Department of Environmental Conservation (ADEC).

3. As approved and conditioned by this revised permit, any construction or operation of the OCS unit within the drilling area shall be in accordance with the description of operation of the facility as described in the applications which resulted in this permit issuance. Nothing in this revised permit shall be construed to relieve EnCana of its obligations under any state or federal laws including, but not limited to, Sections 114, 303, and 328 of the Clean Air Act.

4. Compliance with emission limitations shall be determined through a program of emission inventory calculations and testing as described below:

   a. Compliance Demonstration

      (1) Compliance with the 0.05 % fuel sulfur content limitation for the SDC shall be determined by one of the following methods: A) Upon each fuel delivery, EnCana shall obtain a representative sample of each fuel delivery and analyze the sample for sulfur content using ASTM D-129, D-2622, or D-4294; or B) EnCana may obtain a single certification of sulfur content for each shipment of fuel from the fuel supplier based on a test conducted by or for the fuel supplier, providing that the certification indicates that the sulfur content has been determined by one of the ASTM methods listed above. Certifications for fuel sulfur content shall be kept on site for the duration of this approval and made available to EPA upon request.

      (2) Compliance with the 0.5 % fuel sulfur content limitation for the tugs shall be determined by one of the following methods: (a) EnCana may obtain a sample of each tug's fuel and analyze the sample for sulfur content by one of the ASTM methods listed above; or (b) EnCana may obtain a single certification of sulfur content from the fuel supplier of each tug's fuel based on a test conducted by or for the fuel supplier, providing that the certification indicates that the sulfur content has been determined by one of the ASTM methods listed above. Certifications for fuel sulfur content shall be kept on site for the duration of this approval and made available to EPA upon request.

(3) Opacity of emissions exiting all emissions units shall be determined using EPA Reference Method 9 on at least one (1) occasion during the duration of the project.

(4) Perform NO_x and CO emission source tests consistent with Condition 4.a.(5), 4.a.(6), and 4.a.(7) on one (1) of the Caterpillar D-399 engines as follows:

(A) Test the engine at 100 percent of peak load or maximum normal operating load and determine the hourly NO_x and CO mass emission rate (lb NO_x / hr, lb CO / hr); OR

(B) At 30, 50, 75, and 100 percent of peak load, or at four loads within the normal operating range including the minimum point in the range and the peak load and determine a fuel specific emission factor (lb NO_x / MMBtu fuel oil heat input, lb CO / MMBtu fuel oil heat input).

(C) Conduct NO_x and CO emission source test on the engine according to Condition 4.a.(4)(A) or (B) no later than March 15, 2003, if initial operation commences prior to March 15, 2003, or no later than March 15, 2004, if initial operation commences after March 14, 2003.

(5) Determine site-specific and fuel specific NO_x and CO emission factors for each test load using exhaust properties determined by either Methods 1-4 or Method 19 of 40 CFR 60, Appendix A.

(A) Collect engine operational parameters during the tests.

(B) Measure fuel consumption rate for each source during test.

(C) If electing to use method 19,

(i) The unit must be equipped with a dedicated fuel flow meter accurate to plus or minus 2 percent error. Attach a copy of the fuel meter certification to the emission source test report.

(ii) Determine the Higher Heating Value of the fuel oil supplied to the unit using the applicable ASTM method. Attach a copy of the analysis to the emission source test report.

(6) Conduct all NO_x and CO emission source testing required by this permit in accordance with methods and procedures specified in 40 CFR 60.

(7) Standard exhaust gas volumes must only include the volume of gases formed from the theoretical combustion of fuel, plus the excess air volume normal for the specific source type, corrected to standard conditions (dry gas at 68°F and an absolute pressure of 760 millimeters of mercury.)

(8) Within 45 days of the initial NO_x and CO emission source test required by this permit, calculate and record the NO_x and CO potential to emit from all Caterpillar D-399 engines by applying the source test results from the tested engine. Use the worst-case-site-specific emission factor at worst case operations for each source and operational limits, if any. Use consistent heating values throughout the analysis. Attach the analysis of the potential to emit to the emission source test report required by Condition 4.c.(3).

b. Monitoring and Recordkeeping Requirements

(1) Prior to commencing operation, EnCana shall install, operate and maintain systems to monitor and record the hours of operation of the garbage incinerators and flares. Accurate operator logs shall be maintained to record the hours of operation of the garbage incinerators and flares.

(2) The level of fuel in each of the SDC's storage tanks shall be measured monthly and recorded. The amount of fuel used shall be calculated and recorded monthly. Accurate operator logs shall be maintained to record the fuel levels and calculations.

(3) A log shall be maintained to record any operating problems, which may cause air contaminant emissions to exceed normal rates. The date, time, duration, cause of the event and actions taken to prevent future occurrences shall be documented in the log.

(4) EnCana may submit proposed alternative monitoring procedures to EPA (EPA Region 10, Office of Air Quality, 1200 Sixth Avenue, Seattle, WA 98101) for consideration. EnCana may not deviate from the required monitoring procedures listed above before EPA approves alternative monitoring procedures in writing. EnCana shall maintain a copy of all such EPA approvals of alternative monitoring.

(5) All monitoring records and logs required in Condition 4.b.(1) through (4) shall be maintained on site and shall be made available for inspection by EPA, Minerals Management Service (MMS) or ADEC upon request.

c. Reporting Requirements

(1) Test plans. Before conducting any source tests, EnCana shall submit a plan to the EPA (EPA Region 10, Office of Air Quality, 1200 Sixth Avenue, Seattle, WA 98101). The plan must include the methods and procedures to be used for sampling, testing, and quality assurance, and must specify how the source will operate during the test and how EnCana will document this operation. A complete plan must be submitted within at least 30 days before the scheduled date of any test.

(2) Test notification. At least 10 days before conducting a source test, EnCana shall give EPA (EPA Region 10, Office of Air Quality, 1200 Sixth Avenue, Seattle, WA 98101) written notice of the date and time the source test will begin.

(3) Test reports. Within 45 days after completing a source test, EnCana shall submit two copies of the results, to the extent practical, in the format set out in the Source Test Report Outline of Volume III, Section IV.3, of the State Air Quality Control Plan, adopted by reference in 18 AAC 50.030(8). EnCana shall certify the results as set out in Condition 4.c.(4) of this permit.

(4) Certification. EnCana shall certify all reports, compliance certifications, or other documents submitted to EPA and required under this permit by including the signature of a responsible official for the permitted facility following the statement: "Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete."

5. Access to the source by EPA, MMS, ADEC, or authorized representatives/contractors will be permitted upon request. This right of access is in addition to and is not a limitation on the rights of access afforded by any statute, regulation, or other law.

6. This approval expires on July 4, 2004.

7. Records required by this revised permit shall be maintained for 5 years and shall be made available to EPA, MMS, or ADEC upon request.

November 27, 2002

L. John Iani
Regional Administrator
Region 10

Date